China Energy Storage for Grid System Industry Report, 2015-2018

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STUDY GOAL AND OBJECTIVES

This report provides the industry executives with strategically significant competitor information, analysis, insight and projection on the competitive pattern and key companies in the industry, crucial to the development and implementation of effective business, marketing and R&D programs.

REPORT OBJECTIVES

- To establish a comprehensive, factual, annually updated and cost-effective information base on market size, competition patterns, market segments, goals and strategies of the leading players in the market, reviews and forecasts.
- To assist potential market entrants in evaluating prospective acquisition and joint venture candidates.
- To complement the organizations' internal competitor information gathering efforts with strategic analysis, data interpretation and insight.
- To suggest for concerned investors in line with the current development of this industry as well as the development tendency.
- To help company to succeed in a competitive market, and

METHODOLOGY

Both primary and secondary research methodologies were used in preparing this study. Initially, a comprehensive and exhaustive search of the literature on this industry was conducted. These sources included related books and journals, trade literature, marketing literature, other product/promotional literature, annual reports, security analyst reports, and other publications. Subsequently, telephone interviews or email correspondence was conducted with marketing executives etc. Other sources included related magazines, academics, and consulting companies.

INFORMATION SOURCES

The primary information sources include Company Reports, and National Bureau of Statistics of China etc.

Abstract

Energy storage finds wide application in electric power system, involving all aspects of power generation, transmission, distribution and end user. Technically, energy storage for grid system can be divided into mechanical energy storage, chemical energy storage and electromagnetic energy storage, including the widely used pumped storage under mechanical energy storage, as well as sodium-sulfur batteries, lithium batteries and lead-acid batteries which belong to the scope of chemical energy storage.

In the past five years, the global installed capacity of energy storage for grid system (excluding pumped storage, compressed air storage and thermal storage) has maintained the growth rate of around 20%, hitting 840MW in 2014. By technology, sodium-sulfur batteries and lithium-ion batteries occupy 75% of the global installed capacity together as the mainstream.

In 2014, China's installed capacity of energy storage for grid system (excluding pumped storage, compressed air storage and thermal storage) accounted for about 10% of the world, up over 50% from 2013; meanwhile , China's development pace was far higher than the global growth rate. Unlike foreign counterparts, China emphasizes lithium-ion batteries which share 71% of China's total installed capacity, followed by the lead-acid batteries with about 14%.

To create a clean, sustainable future, the Chinese government is shifting its focus in policy to clean energy technology. As of the end of 2014, China's wind power generation installed capacity had reached 114.6GW, becoming the third power source in China following thermal power and hydropower. Meanwhile, China had seen the photovoltaic (PV) power generation installed capacity of 28.1GW, overtaking the United States as the world's largest PV market. In 2014, the demand of Chinese grid-connected wind power and PV for energy storage equaled to 5.7GW and 3.5GW respectively.

Now, there has been scores of energy storage enterprises in China. Among them, BYD, China Aviation Lithium Battery Co., Ltd. and Sunwoda Electronic Co., Ltd. employ lithium battery energy storage technology; Zhejiang Narada Power Source Co., Ltd. and Shandong Sacred Sun Power Sources Co., ltd. adopt lead-acid battery technology; Dalian Rongke Power Co. Ltd and Prudent Energy Inc. depend on fluid flow battery technology; Shanghai Electric Group Co., Ltd. and Sieyuan Electric Co., Ltd. resort to sodium-sulfur energy storage technology.

Power Storage Business of Major Chinese Enterprises, 2015

Enterprise	Technology	Power Storage
BYD 比亚迪	Lithium Iron Phosphate Battery	It has undertaken energy storage projects of State Grid, China Southern Power Grid and China General Nuclear Power. In 2015, it obtains a 31.5MW commercial energy storage project of Invenergy LLC in Illinois.
SUNWODA 欣旺达	Lithium Battery	It has erected an energy storage base in Qinghai, and shipped storage batteries in large scale; it has developed a megawatt energy storage system based on lithium batteries.
ZTT 中天科技	Lithium Battery	The subsidiary ZTT Energy Storage had installed nearly 10MW of energy storage systems for national 150MW PV projects as of the end of June 2015.
上海电气 SHANGHAI ELECTRIC	Sodium-Sulfur Battery	Shanghai Electric Sodium-Sulfur Batteries Energy-Storage Technology Co., Ltd. has been set up for R & D of sodium sulfur battery technology.
圣阳电源 SACRED SUN	Lead-Carbon Batteries	The energy storage revenue amounted to RMB220 million in H1 2015; it is developing lead-carbon technology with Japan Furukawa Battery Co., Ltd. and has realized mass production of lead-carbon batteries.
Narada 南都	Lead-Carbon + Lithium Battery	The energy storage revenue was RMB96.7 million in H1 2015; the lead-carbon batteries developed by the company independently are used in Zhangbei National Wind Power & Photovoltaic Energy Storage and Transmission Demonstration Project, Zhejiang Luxi Island 4MWh New Energy Micro-Grid Storage Energy Project and the like.
普能科技 Prudent Energy	Vanadium Redox Flow Battery	It has seized the vanadium redox flow battery technology through the acquisition of VRB Power Systems in Canada, and set up kilowatt and megawatt energy storage systems.
融科储能 RONGKE POWER	Vanadium Redox Flow Battery	It has independently designed and manufactured containerized energy storage systems, participated in a wind farm energy storage project of State Grid in Hefeng Northern Town and a 3MW wind power storage project in Heishan Longwan.

Source: China Energy Storage for Grid System Industry Report, 2015-2018 by ResearchInChina

The report is mainly concerned with the followings:

- Development environment, trends, etc. of energy storage for grid system in China;
- Current situation and prediction of energy storage for grid system in China, like market size, competitive landscape, etc.;
- Status quo and forecast for energy storage applications in China;
- Operation and business analysis of 21 major energy storage companies in China and the world.

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